

In the Claims:

Please cancel claim 15, without prejudice.

Please amend claims 1-14, 16-21 and 25 as follows:

1. (Amended) A modular microchannel apparatus for analysis [for] of an analyte, comprising:

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(a) a separation unit [including] having a microchannel, in which the analyte can be driven to pass through the microchannel due to the molecular characteristics thereof [,] and wherein the time for the analyte to pass through the microchannel [being] is indicative of the molecular characteristics of the analyte; and

(b) a reservoir unit having one or more reservoirs having dimensions compatible with the separation unit [for coupling] operatively and modularly [with] coupled to the separation unit to supply liquid reagents and analyte thereto, the reservoirs having prepackaged liquid reagents therein before the reservoir unit is coupled with the separation unit. }

2. (Amended) An apparatus according to claim 1, wherein the separation unit is chip-shaped and formed from a first half and a second half, each having a substantially planar surface facing and joining the other half, wherein at least one of the substantially planar surfaces [having] has a channel thereon such that joining of the two surfaces [joining together to form] forms the microchannel [from the channel].

3. (Amended) An apparatus according to claim 1, wherein the separation unit has one or more openings leading to the microchannel [to admit the] capable of admitting liquid reagents such that when the separation unit and the reservoir unit are operatively and modularly coupled, the openings are aligned with the reservoirs [for] thereby allowing the liquid reagents and analyte to pass from the reservoirs into the microchannel without substantial leakage. }

4. (Amended) An apparatus according to claim 2, wherein the separation unit includes a substrate [made of] comprised of a material other than silicon or silicon dioxide [on] in which the microchannel [has been] is formed by [laser-ablation] laser ablation.

5. (Amended) An apparatus according to claim 2, wherein the reservoir unit includes a membrane covering at least one of the reservoirs confining the prepackaged liquid [reagent,] reagent therein, wherein the membrane [being] is penetrable with a probe for applying a driving force to drive movement of [chemicals] the liquid reagent and analyte from the reservoir through the microchannel [when the separation unit and the reservoir unit are operatively modularly coupled together].

6. (Amended) An apparatus according to claim 2, wherein both [the] substantially planar [surface] surfaces have a laser-ablated channel [laser-ablated] thereon[, the channel of the first half and the channel of the second half joining together] and the two channels join to form the microchannel.

In claim 7, please insert a comma --,-- after "2" and before "wherein".

8. (Amended) An apparatus according to claim 2, further comprising a powering plate [for] operatively and modularly [coupling with] coupled to the reservoir unit, the powering plate having an electrical [communication] connection to at least [a portion] one of the reservoirs to provide a driving force [for driving]to drive movement of the liquid reagents and analyte from the reservoir through the microchannel.

9. (Amended) An apparatus according to claim 8, wherein the powering plate comprises probes for inserting into [the reservoir] at least one of the reservoirs to provide [electrical communication] the electrical connection thereto.

10. (Amended) An apparatus according to claim [2] 26, further comprising a peltier plate [for] operatively and modularly [operatively coupling] coupled to the [separation chip] support plate for controlling the temperature [thereof] of the separation unit.

In claim 11, please insert a comma --,-- after "10" and before "wherein".

12. (Amended) An apparatus according to claim 11, further comprising a heat exchanger operatively connected to the peltier plate to transfer heat between the peltier plate and the surrounding environment.

13. (Amended) A modular microchannel apparatus for analysis of an analyte, comprising:

(a) a separation unit [including] having a microchannel, in which the analyte can be driven to pass through the microchannel due to the molecular characteristics thereof, the separation unit being chip-shaped and formed from a first half and a second half, each having a substantially planar surface facing and joining the other half, wherein at least one of the substantially planar [surfaces having] surfaces has a channel laser ablated thereon such that joining of the two surfaces [joining together to form] forms the microchannel [from the laser-ablated channel], and further wherein the time for the analyte to pass through the microchannel [being] is indicative of the molecular characteristics of the analyte and the separation unit has one or more openings leading to the microchannel [to admit] capable of admitting liquid reagents and analyte; and

(b) a reservoir unit having one or more reservoirs having dimensions compatible with the separation unit [for coupling] operatively and modularly coupled to the separation unit to supply liquid reagents and analyte thereto, such that when the separation unit and the reservoir unit are operatively and modularly coupled the openings are aligned with the reservoirs [for] thereby allowing the liquid reagents and analyte to pass from the reservoirs into the microchannel without substantial leakage, the reservoir having prepackaged liquid reagents therein before the

reservoir unit is coupled [with] to the separation unit, wherein the reservoir unit includes a membrane covering at least one of the reservoirs containing the prepackaged liquid [reagent] reagent therein, the membrane [being] is penetrable with a probe for applying a driving force to drive movement of [chemicals] the liquid reagent and analyte from the reservoir through the microchannel when the separation unit and the reservoir unit are operatively and modularly coupled together; [and]

(c) a powering plate [for] operatively and modularly [coupling to] coupled to the reservoir unit, the powering plate having probes for inserting into at least [a portion] one of the reservoirs to provide a driving force [for driving] to drive movement of the liquid reagents and analyte from the reservoir through the microchannel;

(d) a support plate operatively and modularly coupled to the separation unit; and

(e) a peltier plate [for] operatively and modularly [operatively coupling] coupled to the [separation chip] support plate for controlling the temperature [thereof] of the separation unit.

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14. (Amended) A method for making a modular microchannel apparatus for [analysis] analyzing an analyte, comprising the steps of:

(a) providing a separation unit [including] having a microchannel[,] in which the analyte can be driven to pass through the microchannel due to the molecular characteristics thereof [,] and wherein the time for the analyte to pass through the microchannel [being] is indicative of the molecular characteristics of the analyte; and

(b) [providing] operatively coupling to the separation unit a reservoir unit [having] containing one or more reservoirs [operatively modularly couplable with the separation unit to supply] capable of supplying liquid reagents [thereto] and analyte to the separation unit, the reservoirs having prepackaged liquid reagents therein before the reservoir unit is coupled [with] to the separation unit.

16. (Amended) [A] The method [according] of claim [15 comprising joining a first half and a second half to form the separation unit] 14, wherein the separation unit is chip-shaped and formed from a first half and a second half, each half having a substantially planar surface facing and joining the [other half,] substantially planar surface of the other half, wherein at least one of the substantially planar [surface having] surfaces has a channel laser ablated thereon such that joining of the two surfaces [joining together to form] forms the microchannel [from the laser-ablated channel].

17. (Amended) [A] The method [according] of claim [15 further comprising making] 14, wherein the separation unit has one or more openings [in the separation unit] leading to the microchannel [to admit] capable of admitting the liquid reagents and analyte such that when the separation unit and the reservoir unit are operatively and modularly coupled, the openings are aligned with the reservoirs [for] , thereby allowing the liquid reagents and analyte to pass from the reservoirs into the microchannel without substantial leakage.

OK 18. (Amended) [A] The method [according] of claim [15 further comprising laser-ablating] 14, wherein the separation unit includes a substrate [made of] comprised of a material other than silicon or silicon dioxide [to form the microchannel] in which the microchannel is formed by laser ablation.

19. (Amended) [A] The method [according] of claim [15] 14, further comprising step (c) operatively and modularly coupling a powering plate [with] having a probe therein to the reservoir unit [such] so that the [powering plate having probes inserting] probe is inserted into at least [a portion] one of the reservoirs to provide a driving force [for driving] to drive movement of the liquid reagents and analyte from the reservoir through the microchannel.

20. (Amended) [A] The method [according] of claim [19]27, further comprising step (e) operatively and modularly coupling a peltier plate [with] to the [separation] support plate to heat or cool the separation unit by selecting an appropriate mode of operation.

21. (Amended) [A] The method [according] of claim 20, further comprising step (f) operatively and modularly coupling a heat exchanger to the peltier plate to transfer heat between the peltier plate and the surrounding environment.

25. (Amended) A kit for making a microchannel apparatus for analysis of an analyte, comprising:

(a) a separation unit [including] having a microchannel, in which the analyte can be driven to pass through the microchannel due to the molecular characteristics thereof [,] and wherein the time for the analyte to pass through the microchannel [being] is indicative of the molecular characteristics of the analyte; and

(b) a reservoir unit having one or more reservoirs having dimensions compatible with the separation unit for coupling operatively and modularly [with] to the separation unit to supply liquid reagents and analyte thereto, the reservoirs having prepackaged liquid reagents therein.

Please add new claims 26 and 27 as follows:

--26. (New) The apparatus according to claim 9, further comprising a support plate operatively and modularly coupled to the separation unit.

27. (New) The method of claim 19, further comprising step (d) operatively and modularly coupling a support plate to the separation unit. --